United States Department of Agriculture **Forest Service** **Intermountain Region**

Forest Health Protection
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Subject: FY 2002 Consolidated State and Private Forestry Reporting Items (Your ltr. 9/20/02)

To: Chief

Enclosed are the narrative response and FHPIS tables for the 2002 insect and disease conditions in Region 4. Be advised, the area surveyed in the Intermountain Region during 2002 was reduced by approximately 4 million acres from normal years due to the recall of funds to cover fire suppression costs.

Insect activity increased for 2002. Most of the damage is a direct result of multiple years of drought having weakened the trees' normal defenses. Mountain pine beetle killed over a million trees on the Salmon-Challis National Forest and Sawtooth National Recreation Area in southern Idaho. Pinyon ips-caused tree mortality is increasing in California, Nevada, and Utah, and fir engraver beetle killed true firs on almost all forests in the Intermountain Region. Mortality caused by Douglas-fir beetle remained static for 2002; however, this mortality may be underestimated because portions of Utah and Idaho were not surveyed due to the extreme fire season. Western spruce budworm defoliation continues to increase in Idaho and Utah. One positive note is that the Douglas-fir tussock moth outbreak appears to have ended.

The digital data was sent under separate cover. If you have any questions, please contact Kathleen Matthews at 208-373-4239 or kmatthews03@fs.fed.us or Dayle Bennett at 373-4227 or ddbennett@fs.fed.us.

/s/ Dayle D. Bennett (for)
WILLIAM W. BOETTCHER
Director, State and Private Forestry

Enclosures

cc:
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Insects: Native

Douglas-fir beetle
Dendroctonus pseudotsugae

Region 4: Idaho, Utah, and Wyoming
Host: Douglas-fir

According to aerial survey data, Douglas-fir beetle-caused tree mortality remained static across the Region. The acres for 2002 are underestimated since Idaho and Utah were only partially surveyed due to the extreme fire season. Approximately 29,700 acres were affected: 18,800 in southern Idaho; 5,700 in Utah; and, 5,200 in western Wyoming. The largest concentrations of mortality were located on the Targhee National Forest in southern Idaho (9,800 acres) and the Bridger-Teton National Forest in Wyoming (3,690 acres); although, nearly all National Forests had some level of beetle-caused mortality due to continued drought conditions.

Douglas-fir tussock moth
Orgyia pseudotsugata

Region 4: Idaho, Nevada
Hosts: Douglas-fir, true firs

Total acreage defoliated by Douglas-fir tussock moth in 2002 decreased. Acreage affected was over 2,100 compared to approximately 3,900 acres in 2001. In Idaho, tussock moth defoliation was found on over 1,300 acres of Bureau of Land Management and Private lands. The outbreak in the Owyhee Mountains of southwestern Idaho appears to be over. In northeastern Nevada, over 800 acres were defoliated on most districts of the Humboldt-Toiyabe National Forest.

Fir engraver beetle
Scolytus ventralis

Region 4: California, Idaho, Nevada, and Utah
Hosts: grand fir, red fir, subalpine fir, white fir

Fir engraver beetle-caused tree mortality increased in California, Idaho, and Utah due to continued drought conditions. Aerial surveys recorded approximately 14,600 trees on nearly 5,200 acres affected in 2002. This is an increase from only 7,300 trees on over 2,350 acres in 2001. Affected acreage for 2002 is underestimated since Idaho and Utah were only partially surveyed due to the extreme fire season. Fir mortality decreased in Nevada from nearly 16,400 trees killed over 4,800 acres in 2001 to 7,200 trees killed on over 2,600 acres in 2002. Areas most affected by this insect include the Ely Ranger District on the Humboldt-Toiyabe National Forest in Nevada (4,900 trees on 1,860 acres), the Payette National Forest in southwestern Idaho (2,300 trees on 1,240 acres), and the Manti LaSal National Forest in Utah (3,150 trees on 1,000

acres). Significant tree mortality caused by this insect was also observed on private land, 1,800 trees on 935 acres in southern Idaho and 1,600 trees on 450 acres in Utah.

Jeffrey pine beetle
Dendroctonus jeffreyi

Region 4: California, Nevada
Host: Jeffrey pine

Jeffrey pine beetle activity increased on the Humboldt-Toiyabe National Forest and within the Lake Tahoe Basin Management Area with 1,700 trees killed on 800 acres in 2002 compared to 50 trees on 30 acres reported in 2001.

Mountain pine beetle
Dendroctonus ponderosae

Region 4: California, Colorado, Idaho, Nevada, Utah, and Wyoming
Hosts: limber, lodgepole, Jeffrey, ponderosa, western white, and whitebark pines

Mountain pine beetle-caused tree mortality increased Regionwide from 180,800 trees on approximately 97,000 acres in 2001 to 1,217,200 trees on approximately 127,400 acres in 2002. The acres for 2002 are underestimated since Idaho and Utah were only partially surveyed due to the extreme fire season. The largest outbreak in the Region, which began in 1998, killed approximately 1,037,600 lodgepole pine trees on approximately 69,650 acres on the Sawtooth National Recreation Area and Salmon-Challis National Forests in central Idaho. The other large outbreak was on the Bridger-Teton National Forest in Wyoming. In 2001, approximately 3,700 whitebark/limber pine trees were killed on 1,030 acres. That number increased dramatically to approximately 14,100 whitebark/limber pine trees killed on 6,465 acres in 2002.

Pine engraver beetle
Ips pini

Region 4: Idaho, Nevada, and Utah
Hosts: lodgepole and ponderosa pine

Mortality due to pine engraver beetle remained low throughout the Region. However, beetles did kill scattered groups of ponderosa pine in 2002, mostly on the Boise National Forest in southwestern Idaho. Additional ponderosa pine mortality was detected from ground observations in the late fall. This additional mortality was the result of adult beetles that emerged from infested slash in late August and early September, then infested standing green trees during “feeding” attacks.

Spruce beetle
Dendroctonus rufipennis

Region 4: Idaho, Utah, and Wyoming
Host: spruce

Spruce beetle-caused tree mortality decreased in 2002. Spruce beetle killed 135,350 trees on nearly 29,000 acres in 2002 compared to 336,750 trees on over 76,100 acres in 2001. Southern Utah continues to have the largest infestations with 134,400 trees killed on nearly 28,600 acres. The Manti LaSal National Forest has the largest portion with nearly 77,000 trees killed. The Fishlake National Forest with 19,850 trees killed is the only Forest within the Region where spruce mortality is increasing. The acres for 2002 are underestimated since Idaho and Utah were only partially surveyed due to the extreme fire season.

Western pine beetle
Dendroctonus brevicomis

Region 4: Idaho, Nevada
Host: ponderosa pine

In 2002 approximately 7,700 ponderosa pine trees were killed on over 3,600 acres by the western pine beetle, a significant increase over the 260 trees killed in 2001. Most of the mortality occurred in southern Idaho on the Payette National Forest (4,500 trees), the Boise National Forest (1,000 trees) and on private land (1,100 trees). This increased mortality is directly related to continuing drought conditions.

Western spruce budworm
Choristoneura occidentalis

Region 4: Idaho and Utah
Hosts: Douglas-fir and true firs

Western spruce budworm defoliation is increasing. In 2002, over 22,700 acres were affected, an increase of 8,350 acres over approximately 14,350 acres reported in 2001. Similar to 2001, most of the defoliation for 2002 was concentrated on the Targhee and Boise National Forests in southern Idaho (11,700 and 3,475 acres, respectively). Western spruce budworm defoliation was also recorded in southern Utah on the Dixie (3,750 acres) and Fishlake National Forests (1,800 acres).

Pinyon ips
Ips confusus

Region 4: California, Nevada, Utah
Host: Pinyon pine

Tree mortality in the pinyon pine forests of Region 4 caused by pinyon ips beetle increased dramatically. In 2001, approximately 3,900 trees were killed over 2,300 acres. In 2002, approximately 409,200 trees were killed over 70,500 acres. Historically, pinyon/juniper forests have not been aerially surveyed. However, the dramatic increase in pinyon mortality in 2001 and 2002 resulted in requests by affected National Forests to document this widespread mortality. Most of the mortality caused by the pinyon ips is the result of an extended drought within the affected areas. The acres for 2002 are underestimated since the pinyon pine forest type was only partially surveyed.

Insects: Nonnative

European gypsy moth
Lymantria dispar

Region 4: Idaho, Nevada, and Utah
Hosts: various deciduous species

The gypsy moth was first detected in Utah in 1988. Between 1989 and 1993 almost 72,000-acres of Federal, State, and private lands were treated with *Bacillus thuringensis* (BT). In 1995, after two years of intensive pheromone trapping resulted in no moth captures, the gypsy moth was declared eradicated. In 1997, 46 moths were captured in Salt Lake City and one moth on the adjacent Wasatch-Cache National Forest. In 1998 and 1999, the Utah Department of Agriculture, in cooperation with the USDA Forest Service, treated approximately 800 acres each year in Salt Lake County with BT. In 2000, only one moth was captured in a ten-acre mass-trapping grid. None were captured in 2001's mass trapping grid. In 2002, one male gypsy moth was captured in the Utah gypsy moth detection program on Hill Air Force Base in northern Utah. A delimitation trapping grid will be installed in 2003.

Diseases: Native

Annosum root disease
Heterobasidion annosum

Region 4: California, Idaho, Nevada, Utah, and Wyoming
Hosts: Bitterbrush, chokecherry, Douglas-fir, true firs, spruce and Jeffrey, lodgepole, and ponderosa pines

This disease can be found throughout the Region, but mostly as a saprophyte on dead trees, stumps, roots, and cull logs or fallen stems. The fungus occasionally kills young ponderosa pine especially in plantations on droughty soils.

Armillaria root disease
Armillaria spp.

Region 4: Idaho, Nevada, Utah, and Wyoming
Hosts: Douglas-fir, grand fir, pines, spruce, and subalpine fir

Evidence of Armillaria root disease can be found throughout the Region but functioning primarily as a weak pathogen or saprophyte causing little direct mortality. In southern Utah, it may act as a primary pathogen, killing mature and immature ponderosa pine and mature fir and spruce on cool sites at high elevation.

Black stain root disease
Ophiostoma wageneri

Region 4: Idaho, Nevada, and Utah
Host: Pinyon pine

Aerial detection and follow-up ground surveys have discovered about two-dozen root disease centers in pinyon pine stands in the Intermountain Region. Perennial infections caused mortality of individual pinyon pine over 50-acres of the Bureau of Land Management Burley District in southern Idaho. In Utah and Nevada, the host is more prevalent. The infected acreage totals 1,150-acres on the Humboldt-Toiyabe National Forest in Nevada and 1,350-acres on the Dixie and Manti-LaSal National Forest in Utah. In many cases the areas with black stain have now been infested with pinyon engraver beetles.

Dwarf mistletoes
Arceuthobium spp.

Region 4: Idaho, Nevada, Utah, and Wyoming
Hosts: Douglas-fir, pines, true firs, spruce, and western larch

These plant parasites remain the most widespread and frequently observed disease within the Intermountain Region. Regional incidence by major host species is estimated as follows: lodgepole pine 50 percent, ponderosa pine 20 percent, and Douglas-fir 20 percent. These percentages by host type represent stands having some level of infection.

Diseases: Nonnative

Whitepine blister rust
Cronartium ribicola

Region 4: California, Idaho, Nevada, and Wyoming
Hosts: limber, whitebark, bristlecone, western white and sugar pines

This introduced disease is common throughout its hosts range in southern Idaho and western Wyoming. In 2002, white pine blister rust damage was noted on 1,600 trees over 600 acres on the Salmon-Challis National Forest. It is present in the western portion of the Intermountain Region in California and Nevada near the Lake Tahoe area. No infection has been found or reported in Utah; but the disease has been identified very close to the Utah border in southern Idaho and to the west in the Jarbidge Mountains of northeastern Nevada. Five-needled pine trees are of low occurrence and frequency in the Intermountain Region. Often relegated to high alpine areas, these pines grow slowly but provide important ecosystem functions such as shade and stabilization of snow retention for watershed integrity, recreation, aesthetics, and wildlife habitat and usage.

Declines and Complexes

Subalpine fir mortality complex

Region 4: Idaho, Nevada, Wyoming, and Utah
Host: subalpine fir

Decline and die-off of subalpine fir started in the late 1980's in the Intermountain Region. Peak mortality periods occurred during the mid-1990's when over a million trees were affected by this complex. Although there are a number of pathogens involved in this complex, the primary insect causing subalpine fir mortality is the western balsam bark beetle, *Dryocoetes confuses.* Drought, heat stress, and winter drying, compounded by overstocked and overmature stand conditions also contribute to subalpine fir mortality. In 2002, the death of approximately 334,300 subalpine fir was recorded; an increase from nearly 254,300 trees recorded in 2001.